

lab1

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```
## ./
library(arulesViz)

## Loading required package: arules
## Loading required package: Matrix
##
## Attaching package: 'arules'
## The following objects are masked from 'package:base':
##
##     abbreviate, write
trans = read.transactions("L.txt", format = "basket", sep=" ");

## Warning in asMethod(object): removing duplicated items in transactions
inspect(head(trans));

##      items
## [1] {bushfire,
##      forced,
##      highlands,
##      hill,
##      homes,
##      huge,
##      hundreds,
##      new,
##      people,
##      pushed,
##      south,
##      southern,
##      strong,
##      today,
##      top,
##      towards,
##      town,
##      vacate,
##      wales,
##      winds}
## [2] {blaze,
##      closure,
##      forced,
##      goulburn,
```

```

##      highway,
##      hume,
##      near,
##      new,
##      south,
##      sydney,
##      west}
## [3] {00pm,
##      4,
##      across,
##      aedt,
##      authorities,
##      blue,
##      cell,
##      decision,
##      deterioration,
##      east,
##      evacuate,
##      forced,
##      highlands,
##      hill,
##      homes,
##      make,
##      marked,
##      mountains,
##      moved,
##      new,
##      outlying,
##      people,
##      south,
##      southern,
##      storm,
##      streets,
##      top,
##      wales,
##      weather}
## [4] {500,
##      estimated,
##      homes,
##      left,
##      mittagong,
##      nearby,
##      residents}
## [5] {60,
##      around,
##      burn,
##      caused,
##      conditions,
##      defending,
##      eased,
##      finger,
##      fire,
##      formation,
##      hill,

```

```
##      new,
##      optimistic,
##      properties,
##      rural,
##      says,
##      service,
##      south,
##      top,
##      units,
##      wales,
##      weather}
## [6] {100,
##      blazes,
##      burn,
##      called,
##      crews,
##      eve,
##      fire,
##      goulburn,
##      gunning,
##      new,
##      south,
##      wales,
##      years}
```

2. when lift > 1, con = sup/2

```
library(arulesViz)
library(arules)
association_rules <- apriori(trans, list(minlen = 2, support = 0.01, confidence = 0.01))
```

```
## Apriori
##
## Parameter specification:
## confidence minval smax arem aval originalSupport maxtime support minlen
##      0.01    0.1    1 none FALSE          TRUE      5    0.01    2
## maxlen target  ext
##      10  rules TRUE
##
## Algorithmic control:
## filter tree heap memopt load sort verbose
##      0.1 TRUE TRUE  FALSE TRUE    2    TRUE
##
## Absolute minimum support count: 27
##
## set item appearances ...[0 item(s)] done [0.00s].
## set transactions ...[7213 item(s), 2752 transaction(s)] done [0.02s].
## sorting and recoding items ... [189 item(s)] done [0.00s].
## creating transaction tree ... done [0.00s].
## checking subsets of size 1 2 3 done [0.00s].
## writing ... [57 rule(s)] done [0.00s].
## creating S4 object ... done [0.00s].
```

```
association_rules1 =sort(association_rules, by='lift')
```

```
inspect(association_rules1)
```

##	lhs	rhs	support	confidence	coverage	lift
## [1]	{tora}	=> {bora}	0.01126453	1.00000000	0.01126453	88.774194
## [2]	{bora}	=> {tora}	0.01126453	1.00000000	0.01126453	88.774194
## [3]	{new, south}	=> {wales}	0.01453488	0.95238095	0.01526163	63.925668
## [4]	{per}	=> {cent}	0.01707849	0.95918367	0.01780523	54.993197
## [5]	{cent}	=> {per}	0.01707849	0.97916667	0.01744186	54.993197
## [6]	{11}	=> {september}	0.01053779	0.78378378	0.01344477	53.924324
## [7]	{september}	=> {11}	0.01053779	0.72500000	0.01453488	53.924324
## [8]	{qaeda}	=> {al}	0.01925872	1.00000000	0.01925872	45.866667
## [9]	{al}	=> {qaeda}	0.01925872	0.88333333	0.02180233	45.866667
## [10]	{bin}	=> {laden}	0.01962209	0.81818182	0.02398256	40.207792
## [11]	{laden}	=> {bin}	0.01962209	0.96428571	0.02034884	40.207792
## [12]	{osama}	=> {bin}	0.01090116	0.90909091	0.01199128	37.906336
## [13]	{bin}	=> {osama}	0.01090116	0.45454545	0.02398256	37.906336
## [14]	{bank}	=> {west}	0.01126453	0.65957447	0.01707849	31.844718
## [15]	{west}	=> {bank}	0.01126453	0.54385965	0.02071221	31.844718
## [16]	{prime}	=> {minister}	0.01126453	0.93939394	0.01199128	29.715082
## [17]	{minister}	=> {prime}	0.01126453	0.35632184	0.03161337	29.715082
## [18]	{states}	=> {united}	0.02579942	0.81609195	0.03161337	25.814771
## [19]	{united}	=> {states}	0.02579942	0.81609195	0.03161337	25.814771
## [20]	{africa}	=> {south}	0.01017442	1.00000000	0.01017442	21.500000
## [21]	{south}	=> {africa}	0.01017442	0.21875000	0.04651163	21.500000
## [22]	{wales}	=> {south}	0.01489826	1.00000000	0.01489826	21.500000
## [23]	{south}	=> {wales}	0.01489826	0.32031250	0.04651163	21.500000
## [24]	{new, wales}	=> {south}	0.01453488	1.00000000	0.01453488	21.500000
## [25]	{old}	=> {year}	0.01635174	0.81818182	0.01998547	19.925986
## [26]	{year}	=> {old}	0.01635174	0.39823009	0.04106105	19.925986
## [27]	{wales}	=> {new}	0.01453488	0.97560976	0.01489826	16.573321
## [28]	{south, wales}	=> {new}	0.01453488	0.97560976	0.01489826	16.573321
## [29]	{new}	=> {wales}	0.01453488	0.24691358	0.05886628	16.573321
## [30]	{israeli}	=> {palestinian}	0.02071221	0.61290323	0.03379360	12.778104
## [31]	{palestinian}	=> {israeli}	0.02071221	0.43181818	0.04796512	12.778104
## [32]	{palestinian}	=> {leader}	0.01017442	0.21212121	0.04796512	12.420374
## [33]	{leader}	=> {palestinian}	0.01017442	0.59574468	0.01707849	12.420374
## [34]	{palestinian}	=> {arafat}	0.01126453	0.23484848	0.04796512	9.366711
## [35]	{arafat}	=> {palestinian}	0.01126453	0.44927536	0.02507267	9.366711
## [36]	{arafat}	=> {mr}	0.01671512	0.66666667	0.02507267	6.599520
## [37]	{mr}	=> {arafat}	0.01671512	0.16546763	0.10101744	6.599520
## [38]	{south}	=> {new}	0.01526163	0.32812500	0.04651163	5.574074
## [39]	{new}	=> {south}	0.01526163	0.25925926	0.05886628	5.574074
## [40]	{mr}	=> {said}	0.03960756	0.39208633	0.10101744	2.330500
## [41]	{said}	=> {mr}	0.03960756	0.23542117	0.16824128	2.330500
## [42]	{said}	=> {would}	0.01235465	0.07343413	0.16824128	2.083409
## [43]	{would}	=> {said}	0.01235465	0.35051546	0.03524709	2.083409
## [44]	{government}	=> {says}	0.01453488	0.31007752	0.04687500	2.041467
## [45]	{says}	=> {government}	0.01453488	0.09569378	0.15188953	2.041467
## [46]	{australian}	=> {says}	0.01489826	0.28275862	0.05268895	1.861607
## [47]	{says}	=> {australian}	0.01489826	0.09808612	0.15188953	1.861607
## [48]	{said}	=> {us}	0.01308140	0.07775378	0.16824128	1.711827
## [49]	{us}	=> {said}	0.01308140	0.28800000	0.04542151	1.711827
## [50]	{said}	=> {palestinian}	0.01344477	0.07991361	0.16824128	1.666078
## [51]	{palestinian}	=> {said}	0.01344477	0.28030303	0.04796512	1.666078

```

## [52] {says}      => {australia}  0.01017442 0.06698565 0.15188953 1.562242
## [53] {australia} => {says}      0.01017442 0.23728814 0.04287791 1.562242
## [54] {says}      => {mr}        0.02361919 0.15550239 0.15188953 1.539362
## [55] {mr}        => {says}      0.02361919 0.23381295 0.10101744 1.539362
## [56] {people}   => {said}      0.01162791 0.21621622 0.05377907 1.285156
## [57] {said}      => {people}   0.01162791 0.06911447 0.16824128 1.285156
##      count
## [1] 31
## [2] 31
## [3] 40
## [4] 47
## [5] 47
## [6] 29
## [7] 29
## [8] 53
## [9] 53
## [10] 54
## [11] 54
## [12] 30
## [13] 30
## [14] 31
## [15] 31
## [16] 31
## [17] 31
## [18] 71
## [19] 71
## [20] 28
## [21] 28
## [22] 41
## [23] 41
## [24] 40
## [25] 45
## [26] 45
## [27] 40
## [28] 40
## [29] 40
## [30] 57
## [31] 57
## [32] 28
## [33] 28
## [34] 31
## [35] 31
## [36] 46
## [37] 46
## [38] 42
## [39] 42
## [40] 109
## [41] 109
## [42] 34
## [43] 34
## [44] 40
## [45] 40
## [46] 41
## [47] 41

```

##	[48]	36
##	[49]	36
##	[50]	37
##	[51]	37
##	[52]	28
##	[53]	28
##	[54]	65
##	[55]	65
##	[56]	32
##	[57]	32